

REMARKS

The Official Action mailed July 6, 2006, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

Initially, the Applicant respectfully requests reconsideration of the holding of finality pursuant to MPEP § 706.07(d). The present Official Action mailed July 6, 2006, is a substantially verbatim copy of the previous Official Action mailed December 30, 2005. The present Official Action does not appear to address or respond to any of the detailed arguments presented by the Applicant in the *Response* filed March 30, 2006. As such, the Applicant respectfully submits that the present Official Action is non-responsive and that a holding of finality is completely inappropriate.

The Applicant requests that the Examiner respond to the detailed arguments presented by the Applicant in the *Response* filed March 30, 2006, incorporated herein by reference, in a subsequent non-final Official Action. Further, since it is believed that the Official Action mailed July 6, 2006, should be a non-final Official Action, the Applicant requests entry of the present *Amendment*.

The Applicant notes with appreciation the consideration of the Information Disclosure Statements filed on December 12, 2003; August 22, 2005; and March 30, 2006.

Claims 1-42 were pending in the present application prior to the above amendment. Claims 7, 19, 27 and 38 have been canceled without prejudice or disclaimer. Independent claims 1, 10, 22, 30 and 41 and dependent claims 6, 18, 26 and 37 have been amended to better recite the features of the present invention. New dependent claim 43 has been added to recite additional protection to which the Applicant is entitled. Accordingly, claims 1-6, 8-18, 20-26, 28-37 and 39-43 are now pending in the present application, of which claims 1, 10, 22, 30 and 41 are

independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

The Official Action rejects claims 1-12, 14, 16-31, 33 and 35-42 as obvious based on the combination of U.S. Patent No. 5,789,284 to Yamazaki and U.S. Patent No. 6,083,324 to Henley. The Official Action rejects claims 13, 15, 32 and 34 as obvious based on the combination of Yamazaki '284, Henley and U.S. Patent No. 6,291,888 to Bhat. In addition to the reasons set forth in the *Response* filed March 30, 2006, the Applicant respectfully submits that a *prima facie* case of obviousness cannot be maintained against the independent claims of the present application, as amended.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims, as amended. Independent claims 1, 10, 22, 30 and 41 already recite conducting a second heat treatment to segregate an element for

promoting crystallization into a second semiconductor film. These claims have been further amended to recite that a second heat treatment is conducted by radiation from one or more selected from a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, or a high-pressure mercury lamp in order that a first semiconductor film is heated at 700° C or more, which is supported in the present specification, for example, by at least page 10, lines 12-22 (the Summary of Invention), and page 16, line 16 to page 17, line 9, especially page 17, lines 2-9 (Embodiment 1). For the reasons provided below, Yamazaki '284, Henley and Bhat, either alone or in combination, do not teach or suggest the above-referenced features of the present invention.

The Official Action asserts that the disclosure at column 6, lines 15-18, of Henley corresponds with the claimed second heat treatment of the present claims (page 4, Paper No. 20060626). The Applicant respectfully disagrees and traverses these assertions in the Official Action.

The heating process described in column 5 of Henley does not segregate an element for promoting crystallization into a second semiconductor film. Specifically, although Henley appears to teach that a layer of microbubbles is formed by implanting helium ions into a silicon wafer and heating the semiconductor wafer at 700° C (column 5, lines 4-8), Henley does not teach or suggest trapping elements for promoting crystallization by heat treatment.

Yamazaki '284 and Bhat do not cure the deficiencies in Henley. Yamazaki '284 appears to teach that (1) all steps can be carried out at a temperature such as 500° C or less (column 5, lines 17-22), (2) the heat treatment is carried out at 450° C for two hours (column 7, lines 11-23), (3) heat treatment in a fabrication process is carried out at 550° C (column 8, lines 26-35, Embodiment 2), and (4) the lower limit of the heating temperature for this heat treatment is defined as a temperature at which nickel can diffuse and the lower limit is 400° C or higher, and the upper limit is defined as a strain point of the glass substrate 101 (having a strain point 593° C) (column 13, lines 5-9 and

31-42). That is, the process in Yamazaki '284 is performed at a temperature up to 500° C or 550° C; however, Yamazaki '284 does not teach or suggest the claimed heating process, i.e. a second heat treatment conducted at 700° C or more.


Bhat is relied upon to allegedly teach features related to dependent claims 13, 15, 32 and 34. Specifically, the Official Action relies on Bhat to teach the use of ozone water or ozone (pages 5-6, Paper No. 20060626). However, Henley, Yamazaki '284 and Bhat, either alone or in combination, do not teach or suggest conducting a second heat treatment to segregate an element for promoting crystallization into a second semiconductor film, where the second heat treatment is conducted by radiation from one or more selected from a halogen lamp, a metal halide lamp, a xenon arc lamp, a carbon arc lamp, a high-pressure sodium lamp, or a high-pressure mercury lamp in order that a first semiconductor film is heated at 700° C or more.

Since Yamazaki '284, Henley and Bhat do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

New dependent claim 43 has been added to recite additional protection to which the Applicant is entitled. For the reasons stated above and already of record, the Applicant respectfully submits that new claim 43 is in condition for allowance.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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